

AMENDMENTS

In the Claims

1. (canceled)
2. (previously presented) The composition of claim 100 wherein said alkane sulfates, alkane sulfonates, and phosphate esters have from about 8 to about 18 carbon atoms; and said polyoxyethylene alcohols are selected from the group consisting of polyoxyethylene alcohols having a carbon chain of about 8 to about 30 carbon atoms and having from about 3 to about 50 moles ethylene oxide.
3. (previously presented) The composition of claim 100 wherein said polyoxyethylene alcohols have from about 13 to about 15 carbon atoms.
4. (previously presented) The composition of claim 100 wherein said polyoxyethylene alcohols have from about 3 to about 20 moles ethylene oxide.
5. (previously presented) The composition of claim 2 wherein said polyoxyethylene alcohols have from about 3 to about 20 moles ethylene oxide.
6. (previously presented) The composition of claim 3 wherein said polyoxyethylene alcohols have from about 3 to about 20 moles ethylene oxide.
7. (previously presented) The composition of claim 100 wherein said polyoxyethylene alcohols are selected from the group consisting of linear polyoxyethylene alcohols, polyoxyethylene alcohols having about 10 moles ethylene oxide, and a combination thereof.
8. (previously presented) The composition of claim 2 wherein said polyoxyethylene alcohols are selected from the group consisting of linear polyoxyethylene alcohols, polyoxyethylene alcohols having about 10 moles ethylene oxide, and a combination thereof.
9. (previously presented) The composition of claim 3 wherein said polyoxyethylene alcohols are selected from the group consisting of linear polyoxyethylene alcohols, polyoxyethylene alcohols having about 10 moles ethylene oxide, and a combination thereof.

10. (previously presented) The composition of claim 100 wherein said combination comprises a blend of non-ionic emulsifier and anionic emulsifier at a ratio of about 50/50 wt% to about 85/15 wt%.

11. (previously presented) The composition of claim 2 wherein said combination comprises a blend of non-ionic emulsifier and anionic emulsifier at a ratio of about 50/50 wt% to about 85/15 wt%.

12. (previously presented) The composition of claim 4 wherein said combination comprises a blend of non-ionic emulsifier and anionic emulsifier at a ratio of about 50/50 wt% to about 85/15 wt%.

13. (previously presented) The composition of claim 5 wherein said combination comprises a blend of non-ionic emulsifier and anionic emulsifier at a ratio of about 50/50 wt% to about 85/15 wt%.

14. (previously presented) The composition of claim 6 wherein said combination comprises a blend of non-ionic emulsifier and anionic emulsifier at a ratio of about 50/50 wt% to about 85/15 wt%.

15. (currently amended) A composition for emulsifying free hydrocarbons in drill cuttings comprising:

a combination comprising a blend of non-ionic emulsifier and anionic emulsifier at a ratio of about 50/50 wt% to about 85/15 wt%, said blend having an HLB effective to emulsify said free hydrocarbons and comprising a media adapted to initiate acid reactive polymerization upon exposure to of a polymerizable silicate solution;

wherein said anionic emulsifiers are selected from the group consisting of alkane sulfates, alkane sulfonates, and phosphate esters; and,

said non-ionic emulsifiers are selected from the group consisting of linear polyoxyethylene alcohols having from about 13 to about 15 carbon atoms and about 10 moles ethylene oxide, and a combination thereof.

16-24. (canceled)

25. (previously presented) The composition of claim 100 wherein said alkane sulfates, alkane sulfonates, and phosphate esters have from about 8 to about 12 carbon atoms.

26-28. (canceled)

29. (original) The composition of claim 10 comprising about 10 wt.% or less of said combination of non-ionic emulsifiers with anionic emulsifiers.

30-36. (canceled)

37. (withdrawn) The composition of claim 30 wherein said droplets are encapsulated by an encapsulating material.

38. (withdrawn) The composition of claim 32 wherein droplets are encapsulated by an encapsulating material.

39. (withdrawn) The composition of claim 34 wherein said droplets are encapsulated by an encapsulating material.

40. (withdrawn) The composition of claim 37 wherein said encapsulating material is a silicate.

41. (withdrawn) The composition of claim 38 wherein said encapsulating material is a silicate.

42. (withdrawn) The composition of claim 39 wherein said encapsulating material is a silicate.

43. (previously presented) A composition comprising:
drill cuttings; and,

an emulsion comprising droplets comprising free hydrocarbons emulsified by a combination of non-ionic emulsifiers with anionic emulsifiers having an HLB effective to emulsify said free hydrocarbons, said emulsion further comprising media adapted to initiate acid reactive polymerization upon exposure to polymerizable silicate solution,

wherein said anionic emulsifiers are selected from the group consisting of alkane sulfates, alkane sulfonates, and phosphate esters; and,

said non-ionic emulsifiers are selected from the group consisting of polyoxyethylene alcohols.

44. (previously presented) The composition of claim 43 wherein said anionic emulsifiers comprise from about 8 to about 18 carbon atoms; and said polyoxyethylene alcohols are selected from the group consisting of polyoxyethylene alcohols having from about 8 to about 30 carbon atoms and having from about 3 to about 50 moles ethylene oxide.

45. (previously presented) The composition of claim 44 wherein said anionic emulsifiers comprise from about 13 to about 15 carbon atoms.

46. (previously presented) The composition of claim 45 wherein said anionic emulsifiers are selected from the group consisting of linear polyoxyethylene alcohols, polyoxyethylene alcohols comprising about 10 moles ethylene oxide, and a combination thereof.

47-48. (canceled).

49. (previously presented) The composition of claim 43 wherein said droplets have a diameter of from about 3 microns to about 20 microns.

50. (previously presented) The composition of claim 49 wherein said droplets have a diameter of from about 3 to about 10 microns.

51-52. (canceled).

53. (withdrawn) The composition of claim 43 wherein said droplets are encapsulated by an encapsulating material.

54. (withdrawn) The composition of claim 44 wherein droplets are encapsulated by an encapsulating material.

55. (withdrawn) The composition of claim 45 wherein said emulsion comprises droplets encapsulated by an encapsulating material.

56. (withdrawn) The composition of claim 51 wherein said droplets are encapsulated by an encapsulating material.

57. (withdrawn) The composition of claim 52 wherein said droplets are encapsulated by an encapsulating material.

58. (withdrawn) The composition of claim 53 wherein said encapsulating material is a silicate.

59. (withdrawn) The composition of claim 54 wherein said encapsulating material is a silicate.

60. (withdrawn) The composition of claim 55 wherein said encapsulating material is a silicate.

61. (withdrawn) The composition of claim 56 wherein said encapsulating material is a silicate.

62. (withdrawn) The composition of claim 57 wherein said encapsulating material is a silicate.
63. (withdrawn) A composition comprising:
droplets comprising free hydrocarbons and emulsifier selected from the group consisting of non-ionic emulsifiers, anionic emulsifiers, and a combination thereof, said droplets being encapsulated by an encapsulating material;
wherein said anionic emulsifiers are selected from the group consisting of alkane sulfates, alkane sulfonates, and phosphate esters; and,
said non-ionic emulsifiers comprise polyoxyethylene alcohols.
64. (withdrawn) The composition of claim 63 wherein
said anionic emulsifiers comprise from about 8 to about 18 carbon atoms; and
said polyoxyethylene alcohols comprise from about 8 to about 30 carbon atoms and
from about 3 to about 50 moles ethylene oxide.
65. (withdrawn) The composition of claim 63 wherein said polyoxyethylene alcohols comprise from about 13 to about 15 carbon atoms.
66. (withdrawn) The composition of claim 64 wherein said polyoxyethylene alcohols comprise from about 3 to about 20 moles ethylene oxide.
67. (withdrawn) The composition of claim 65 wherein said polyoxyethylene alcohols comprise from about 3 to about 20 moles ethylene oxide.
68. (withdrawn) The composition of claim 63 wherein said polyoxyethylene alcohols are selected from the group consisting essentially of linear polyoxyethylene alcohols, polyoxyethylene alcohols comprising about 10 moles ethylene oxide, and a combination thereof.
69. (withdrawn) The composition of claim 65 wherein said polyoxyethylene alcohols are selected from the group consisting essentially of linear polyoxyethylene alcohols, polyoxyethylene alcohols comprising about 10 moles ethylene oxide, and a combination thereof.
70. (withdrawn) The composition of claim 63 wherein said combination comprises a blend of non-ionic emulsifier and anionic emulsifier at a ratio of about 50/50 to about 85/15.

71. (withdrawn) The composition of claim 67 wherein said combination comprises a blend of non-ionic emulsifier and anionic emulsifier at a ratio of about 50/50 to about 85/15.

72. (withdrawn) The composition of claim 63 comprising a pH of about 4 or less.

73. (withdrawn) The composition of claim 67 comprising a pH of about 4 or less.

74. (withdrawn) A composition comprising droplets comprising free hydrocarbons, said droplets having a diameter of from about 3 microns to about 20 microns and being encapsulated by an encapsulating material.

75. (withdrawn) The composition of claim 74 wherein said encapsulating material is a silicate.

76. (withdrawn) The composition of claim 75 further comprising drill cuttings.

77. (withdrawn) A composition comprising a droplets comprising a quantity of free hydrocarbons, said droplets being encapsulated by an encapsulating material effective to maintain a leachate of about 0.5% or less of said quantity of free hydrocarbons.

78. (withdrawn) The composition of claim 77 wherein said leachate is about 0.25% or less of said quantity of free hydrocarbons.

79. (withdrawn) The composition of claim 77 wherein said leachate is about 0.05% or less of said quantity of free hydrocarbons.

80. (previously presented) A composition consisting essentially of:

a combination of non-ionic emulsifiers with anionic emulsifiers having an HLB effective to produce an emulsion comprising free hydrocarbon droplets, said combination further comprising media adapted to initiate acid reactive polymerization upon exposure to polymerizable silicate solution thereby encapsulating said free hydrocarbon droplets; wherein

said anionic emulsifiers are selected from the group consisting of alkane sulfates, alkane sulfonates, and phosphate esters; and,

said non-ionic emulsifiers are selected from the group consisting of polyoxyethylene alcohols.

81. (previously presented) The composition of claim 80 wherein said alkane sulfates, alkane sulfonates, and phosphate esters have a carbon chain having from about 8 to about 18 carbon atoms; and

said polyoxyethylene alcohols are selected from the group consisting of polyoxyethylene alcohols having a carbon chain of about 8 to about 30 carbon atoms and having from about 3 to about 50 moles ethylene oxide.

82. (previously presented) The composition of claim 80 wherein said polyoxyethylene alcohols are selected from the group consisting of polyoxyethylene alcohols having from about 13 to about 15 carbon atoms.

83. (previously presented) The composition of claim 80 wherein said polyoxyethylene alcohols are selected from the group consisting of polyoxyethylene alcohols having from about 3 to about 20 moles ethylene oxide.

84. (previously presented) The composition of claim 81 wherein said polyoxyethylene alcohols are selected from the group consisting of polyoxyethylene alcohols having from about 3 to about 20 moles ethylene oxide.

85. (previously presented) The composition of claim 82 wherein said polyoxyethylene alcohols are selected from the group consisting of polyoxyethylene alcohols having from about 3 to about 20 moles ethylene oxide.

86. (previously presented) The composition of claim 80 wherein said polyoxyethylene alcohols are selected from the group consisting of linear polyoxyethylene alcohols, polyoxyethylene alcohols having about 10 moles ethylene oxide, and a combination thereof.

87. (previously presented) The composition of claim 81 wherein said polyoxyethylene alcohols are selected from the group consisting of linear polyoxyethylene alcohols, polyoxyethylene alcohols having about 10 moles ethylene oxide, and a combination thereof.

88. (previously presented) The composition of claim 82 wherein said polyoxyethylene alcohols are selected from the group consisting of linear polyoxyethylene alcohols, polyoxyethylene alcohols having about 10 moles ethylene oxide, and a combination thereof.

89. (previously presented) The composition of claim 80 wherein said non-ionic emulsifier is at a weight ratio to said anionic emulsifier of about 50/50 to about 85/15.

90. (previously presented) The composition of claim 81 wherein said non-ionic emulsifier is at a weight ratio to said anionic emulsifier of about 50/50 to about 85/15.

91. (previously presented) The composition of claim 83 wherein said non-ionic emulsifier is at a weight ratio to said anionic emulsifier of about 50/50 to about 85/15.
92. (previously presented) The composition of claim 84 wherein said non-ionic emulsifier is at a weight ratio to said anionic emulsifier of about 50/50 to about 85/15.
93. (previously presented) The composition of claim 85 wherein said non-ionic emulsifier is at a weight ratio to said anionic emulsifier of about 50/50 to about 85/15.
94. (previously presented) The composition of claim 88 wherein said non-ionic emulsifier is at a weight ratio to said anionic emulsifier of about 50/50 to about 85/15.
95. (previously presented) The composition of claim 80 wherein said alkane sulfates, alkane sulfonates, and phosphate esters have from about 8 to about 12 carbon atoms.
96. (previously presented) The composition of claim 82 wherein said alkane sulfates, alkane sulfonates, and phosphate esters have from about 8 to about 12 carbon atoms.
97. (previously presented) The composition of claim 83 wherein said alkane sulfates, alkane sulfonates, and phosphate esters have from about 8 to about 12 carbon atoms.
98. (previously presented) The composition of claim 85 wherein said alkane sulfates, alkane sulfonates, and phosphate esters have from about 8 to about 12 carbon atoms.
99. (previously presented) The composition of claim 89 comprising about 10 wt.% or less of said combination of non-ionic emulsifiers with anionic emulsifiers.
100. (previously presented) A composition consisting essentially of:
an emulsion comprising droplets comprising free hydrocarbons emulsified by a combination of non-ionic emulsifiers with anionic emulsifiers having an HLB effective to emulsify said free hydrocarbons and comprising media adapted to initiate acid reactive polymerization upon exposure to polymerizable silicate solution,
wherein said anionic emulsifiers are selected from the group consisting of alkane sulfates, alkane sulfonates, and phosphate esters; and, said non-ionic emulsifiers are selected from the group consisting of polyoxyethylene alcohols.
101. (currently amended) The composition of claim 100 wherein:

said polyoxyethylene alcohols have from about 8 to about 18 carbon atoms; and,
said polyoxyethylene alcohols are selected from the group consisting of
polyoxyethylene alcohols having from about 8 to about 30 carbon atoms and
from about 3 to about 50 moles ethylene oxide.

102-104. (canceled).

105. (previously presented) A composition consisting essentially of:

drill cuttings; and,

an emulsion comprising droplets comprising free hydrocarbons emulsified by a
combination of non-ionic emulsifiers with anionic emulsifiers having an HLB
effective to emulsify said free hydrocarbons, said emulsion comprising media
adapted to initiate acid reactive polymerization upon exposure to polymerizable
silicate solution,

wherein

said anionic emulsifiers are selected from the group consisting of alkane sulfates,
alkane sulfonates, and phosphate esters; and,

said non-ionic emulsifiers are selected from the group consisting of polyoxyethylene
alcohols.

106. (previously presented) The composition of claim 105 wherein

said alkane sulfates, alkane sulfonates, and phosphate esters have from about 8 to about
18 carbon atoms; and

said polyoxyethylene alcohols are selected from the group consisting of
polyoxyethylene alcohols having a carbon chain of about 8 to about 30 carbon
atoms and having from about 3 to about 50 moles ethylene oxide.

107. (previously presented) The composition of claim 106 wherein said
polyoxyethylene alcohols are selected from the group consisting of polyoxyethylene alcohols
having from about 13 to about 15 carbon atoms.

108. (previously presented) The composition of claim 107 wherein said
polyoxyethylene alcohols are selected from the group consisting of linear polyoxyethylene
alcohols, polyoxyethylene alcohols having about 10 moles ethylene oxide, and combinations
thereof.

109. (previously presented) The composition of claim 105 wherein said droplets have a diameter of from about 3 microns to about 20 microns.

110. (previously presented) The composition of claim 109 wherein said droplets have a diameter of from about 3 microns to about 10 microns.

111. (previously presented) The composition of claim 108 wherein said droplets have a diameter of from about 3 microns to about 20 microns.

112. (previously presented) The composition of claim 111 wherein said droplets have a diameter of from about 3 microns to about 10 microns.

113. (previously presented) A composition for emulsifying free hydrocarbons in drill cuttings obtained using a drilling fluid comprising isomerized olefins, said composition consisting essentially of:

a combination of non-ionic emulsifiers and anionic emulsifiers, said combination having an HLB of about 12.5, said anionic emulsifiers being selected from the group consisting of alkane sulfates, alkane sulfonates, and phosphate esters and said non-ionic emulsifiers being selected from the group consisting of polyoxyethylene alcohols; and,
media adapted to initiate polymerization upon exposure to polymerizable silicate solution.

114. (previously presented) The composition of claim 113 wherein said media consists essentially of an aqueous solution of phosphoric acid.

115. (previously presented) The composition of claim 114 wherein said aqueous solution of phosphoric acid is about 75 wt% phosphoric acid.

116. (previously presented) The composition of claim 114 wherein said combination of non-ionic emulsifiers and anionic emulsifiers is at a weight ratio to said aqueous solution of phosphoric acid of about 3:23.

117. (previously presented) The composition of claim 115 wherein said combination of non-ionic emulsifiers and anionic emulsifiers is at a weight ratio to said aqueous solution of phosphoric acid of about 3:23.

118. (previously presented) The composition of claim 113 wherein said non-ionic emulsifiers have from about 13 to about 15 carbon atoms of linear alcohol ethoxylate with about 10 moles of ethylene oxide.

119. (previously presented) The composition of claim 113 wherein said anionic emulsifiers are selected from the group consisting of secondary alkanesulfonates of sodium and sodium octyl sulfate.

120. (previously presented) The composition of claim 114 wherein said polyoxyethylene alcohols have from about 13 to about 15 carbon atoms and about 10 moles of ethylene oxide.

121. (previously presented) The composition of claim 114 wherein said anionic emulsifiers are selected from the group consisting of secondary alkanesulfonates of sodium and sodium octyl sulfate.

122. (previously presented) The composition of claim 115 wherein said polyoxyethylene alcohols have about 10 moles of ethylene oxide and from about 13 to about 15 carbon atoms.

123. (previously presented) The composition of claim 115 wherein said anionic emulsifiers are selected from the group consisting of secondary alkanesulfonates of sodium and sodium octyl sulfate.

124. (previously presented) The composition of claim 116 wherein said non-ionic emulsifiers have about 13 to about 15 carbon atoms of linear alcohol ethoxylate with about 10 moles of ethylene oxide.

125. (previously presented) The composition of claim 116 wherein said anionic emulsifiers are selected from the group consisting of secondary alkanesulfonates of sodium and sodium octyl sulfate.

126. (previously presented) The composition of claim 117 wherein said non-ionic emulsifiers are selected from the group consisting of linear alcohol ethoxylates having about 13 to about 15 carbon atoms with about 10 moles of ethylene oxide.

127. (previously presented) The composition of claim 117 wherein said anionic emulsifiers are selected from the group consisting of secondary alkanesulfonates of sodium and sodium octyl sulfates.

128. (previously presented) The composition of claim 113 wherein said non-ionic emulsifiers are at a weight ratio of about 60:40 linear alcohol ethoxylate with 10 moles of ethylene oxide to said anionic emulsifiers selected from the group consisting of secondary alkanesulfonates of sodium and sodium octyl sulfate.

129. (previously presented) The composition of claim 114 wherein said non-ionic emulsifiers are at a weight ratio of about 60:40 linear alcohol ethoxylate with 10 moles of ethylene oxide to said anionic emulsifiers selected from the group consisting of secondary alkanesulfonates of sodium and sodium octyl sulfate.

130. (previously presented) The composition of claim 115 wherein said non-ionic emulsifiers are at a weight ratio of about 60:40 linear alcohol ethoxylate with 10 moles of ethylene oxide to said anionic emulsifiers selected from the group consisting of secondary alkanesulfonates of sodium and sodium octyl sulfate.

131. (previously presented) The composition of claim 117 wherein said non-ionic emulsifiers are at a weight ratio of about 60:40 linear alcohol ethoxylate with 10 moles of ethylene oxide to said anionic emulsifiers selected from the group consisting of secondary alkanesulfonates of sodium and sodium octyl sulfate.

132. (previously presented) The composition of claim 113 wherein said non-ionic emulsifier is isodecyl alcohol ethoxylate with about 6 moles of ethylene oxide.

133. (previously presented) The composition of claim 114 wherein said non-ionic emulsifier is isodecyl alcohol ethoxylate with about 6 moles of ethylene oxide.

134. (previously presented) The composition of claim 115 wherein said non-ionic emulsifier is isodecyl alcohol ethoxylate with about 6 moles of ethylene oxide.

135. (previously presented) The composition of claim 116 wherein said non-ionic emulsifier is isodecyl alcohol ethoxylate with about 6 moles of ethylene oxide.

136. (previously presented) The composition of claim 117 wherein said non-ionic emulsifier is isodecyl alcohol ethoxylate with about 6 moles of ethylene oxide.

137. (previously presented) The composition of claim 113 wherein said non-ionic emulsifiers are at a weight ratio of about 85:15 isodecyl alcohol ethoxylate with 6 moles of ethylene oxide to said anionic emulsifiers selected from the group consisting of secondary alkanesulfonates of sodium and sodium octyl sulfate.

138. (previously presented) The composition of claim 114 wherein said non-ionic emulsifiers are at a weight ratio of about 85:15 isodecyl alcohol ethoxylate with 6 moles of ethylene oxide to said anionic emulsifiers selected from the group consisting of secondary alkanesulfonates of sodium and sodium octyl sulfate.

139. (previously presented) The composition of claim 115 wherein said non-ionic emulsifiers are at a weight ratio of about 85:15 isodecyl alcohol ethoxylate with 6 moles of ethylene oxide to said anionic emulsifiers selected from the group consisting of secondary alkanesulfonates of sodium and sodium octyl sulfate.

140. (previously presented) The composition of claim 117 wherein said non-ionic emulsifiers are at a weight ratio of about 85:15 isodecyl alcohol ethoxylate with 6 moles of ethylene oxide to said anionic emulsifiers selected from the group consisting of secondary alkanesulfonates of sodium and sodium octyl sulfate.

141. (previously presented) A composition for emulsifying free hydrocarbons in drill cuttings obtained using a drilling fluid comprising esters, said composition consisting essentially of:

a combination of non-ionic emulsifiers and anionic emulsifiers, said combination having an HLB of about 15.4, said anionic emulsifiers being selected from the group consisting of alkane sulfates, alkane sulfonates, and phosphate esters and said non-ionic emulsifiers being selected from the group consisting of polyoxyethylene alcohols; and,

media adapted to initiate polymerization of a polymerizable silicate solution.

142. (previously presented) The composition of claim 141 wherein said media consists essentially of an aqueous solution of phosphoric acid.

143. (previously presented) The composition of claim 142 wherein said aqueous solution of phosphoric acid has about 75 wt% phosphoric acid.

144. (previously presented) The composition of claim 141 wherein said non-ionic emulsifiers are selected from the group consisting of oleyl alcohol ethoxylates with about 20 moles of ethylene oxide.

145. (previously presented) The composition of claim 141 wherein said anionic emulsifier is sodium octyl sulfate.

146. (previously presented) The composition of claim 142 wherein said non-ionic emulsifier is oleyl alcohol ethoxylate with about 20 moles of ethylene oxide.

147. (previously presented) The composition of claim 142 wherein said anionic emulsifier is sodium octyl sulfate.

148. (previously presented) The composition of claim 143 wherein said non-ionic emulsifier is oleyl alcohol ethoxylate with about 20 moles of ethylene oxide.

149. (previously presented) The composition of claim 143 wherein said anionic emulsifier is sodium octyl sulfate.

150. (previously presented) The composition of claim 141 wherein said non-ionic emulsifiers are at a weight ratio of about 90:10 to said anionic emulsifiers, said non-ionic emulsifier being oleyl alcohol ethoxylate with about 20 moles of ethylene oxide and said anionic emulsifier being sodium octyl sulfate.

151. (previously presented) The composition of claim 142 wherein said non-ionic emulsifiers are at a weight ratio of about 90:10 to said anionic emulsifiers, said non-ionic emulsifier being oleyl alcohol ethoxylate with about 20 moles of ethylene oxide and said anionic emulsifier being sodium octyl sulfate.

152. (previously presented) The composition of claim 143 wherein said non-ionic emulsifiers are at a weight ratio of about 90:10 to said anionic emulsifiers, said non-ionic emulsifier being oleyl alcohol ethoxylate with about 20 moles of ethylene oxide and said anionic emulsifier being sodium octyl sulfate.

153. (previously presented) A composition for emulsifying free hydrocarbons in drill cuttings obtained using a drilling fluid comprising paraffin-containing mud, said composition consisting essentially of:

a combination of non-ionic emulsifiers and anionic emulsifiers, said combination having an HLB of about 12.5, said anionic emulsifiers being selected from the group consisting of alkane sulfates, alkane sulfonates, and phosphate esters and said non-ionic emulsifiers being selected from the group consisting of polyoxyethylene alcohols; and,

media adapted to initiate polymerization upon exposure to polymerizable silicate solution.

154. (previously presented) The composition of claim 153 wherein said media comprises an aqueous solution of phosphoric acid.

155. (previously presented) The composition of claim 154 wherein said aqueous solution of phosphoric acid has about 75 wt% phosphoric acid.

156. (previously presented) The composition of claim 153 wherein said non-ionic emulsifier is isodecyl alcohol ethoxylate with about 6 moles of ethylene oxide.
157. (previously presented) The composition of claim 153 wherein said anionic emulsifier is selected from the group consisting of secondary alkanesulfonates of sodium and sodium octyl sulfate.
158. (previously presented) The composition of claim 154 wherein said non-ionic emulsifier is isodecyl alcohol ethoxylate with about 6 moles of ethylene oxide.
159. (previously presented) The composition of claim 154 wherein said anionic emulsifier is selected from the group consisting of secondary alkanesulfonates of sodium and sodium octyl sulfate.
160. (previously presented) The composition of claim 155 wherein said non-ionic emulsifier is isodecyl alcohol ethoxylate with about 6 moles of ethylene oxide.
161. (previously presented) The composition of claim 155 wherein said anionic emulsifier is selected from the group consisting of secondary alkanesulfonates of sodium and sodium octyl sulfate.
162. (previously presented) A composition for emulsifying free hydrocarbons in drill cuttings obtained using a drilling fluid comprising synthetic isoparaffin-containing mud, said composition consisting essentially of:
- one or more non-ionic emulsifiers having an HLB of about 10.9, said non-ionic emulsifiers being selected from the group consisting of polyoxyethylene alcohols; and,
 - media adapted to initiate polymerization upon exposure to polymerizable silicate solution.
163. (previously presented) The composition of claim 162 wherein said media comprises an aqueous solution of phosphoric acid.
164. (previously presented) The composition of claim 163 wherein said aqueous solution of phosphoric acid has about 75 wt% phosphoric acid.
165. (previously presented) The composition of claim 162 wherein said non-ionic emulsifier is isotridecyl ethoxylate with about 3 moles of ethylene oxide.
166. (previously presented) The composition of claim 162 wherein said non-ionic emulsifier is isotridecyl ethoxylate with about 10 moles of ethylene oxide.

167. (previously presented) The composition of claim 163 wherein said non-ionic emulsifier is isotridecyl ethoxylate with about 3 moles of ethylene oxide.
168. (previously presented) The composition of claim 163 wherein said non-ionic emulsifier is isotridecyl ethoxylate with about 10 moles of ethylene oxide.
169. (previously presented) The composition of claim 164 wherein said non-ionic emulsifier is isotridecyl ethoxylate with about 3 moles of ethylene oxide.
170. (previously presented) The composition of claim 164 wherein said non-ionic emulsifier is isotridecyl ethoxylate with about 10 moles of ethylene oxide.
171. (previously presented) The composition of claim 162 wherein said non-ionic emulsifiers are at a weight ratio of about 50:50 isotridecyl ethoxylate with about 3 moles of ethylene oxide to isotridecyl ethoxylate with about 10 moles of ethylene oxide.
172. (previously presented) The composition of claim 163 wherein said non-ionic emulsifiers are at a weight ratio of about 50:50 isotridecyl ethoxylate with about 3 moles of ethylene oxide to isotridecyl ethoxylate with about 10 moles of ethylene oxide.
173. (previously presented) The composition of claim 164 wherein said non-ionic emulsifiers are at a weight ratio of about 50:50 isotridecyl ethoxylate with about 3 moles of ethylene oxide to isotridecyl ethoxylate with about 10 moles of ethylene oxide.
174. (previously presented) A composition consisting of:
a combination of non-ionic emulsifiers with anionic emulsifiers having an HLB effective to emulsify free hydrocarbons in media adapted to initiate acid reactive polymerization upon exposure to polymerizable silicate solution, wherein said anionic emulsifiers are selected from the group consisting of alkane sulfates, alkane sulfonates, and phosphate esters; and, said non-ionic emulsifiers are selected from the group consisting of polyoxyethylene alcohols.
175. (previously presented) The composition of claim 174 wherein said alkane sulfates, alkane sulfonates, and phosphate esters have from about 8 to about 18 carbon atoms; and
said polyoxyethylene alcohols have from about 8 to about 30 carbon atoms and from about 3 to about 50 moles ethylene oxide.
176. (previously presented) The composition of claim 174 wherein said polyoxyethylene alcohols have from about 13 to about 15 carbon atoms.

177. (previously presented) The composition of claim 174 wherein said polyoxyethylene alcohols have from about 3 to about 20 moles ethylene oxide.
178. (previously presented) The composition of claim 175 wherein said polyoxyethylene alcohols have from about 3 to about 20 moles ethylene oxide.
179. (previously presented) The composition of claim 176 wherein said polyoxyethylene alcohols have from about 3 to about 20 moles ethylene oxide.
180. (previously presented) The composition of claim 174 wherein said polyoxyethylene alcohols are selected from the group consisting of linear polyoxyethylene alcohols, polyoxyethylene alcohols having about 10 moles ethylene oxide, and a combination thereof.
181. (previously presented) The composition of claim 175 wherein said polyoxyethylene alcohols are selected from the group consisting of linear polyoxyethylene alcohols, polyoxyethylene alcohols having about 10 moles ethylene oxide, and a combination thereof.
182. (previously presented) The composition of claim 176 wherein said polyoxyethylene alcohols are selected from the group consisting of linear polyoxyethylene alcohols, polyoxyethylene alcohols having about 10 moles ethylene oxide, and a combination thereof.
183. (previously presented) The composition of claim 174 wherein said combination is a blend of non-ionic emulsifier and anionic emulsifier at a weight ratio of about 50/50 to about 85/15.
184. (previously presented) The composition of claim 175 wherein said combination is a blend of non-ionic emulsifier and anionic emulsifier at a weight ratio of about 50/50 to about 85/15.
185. (previously presented) The composition of claim 177 wherein said combination is a blend of non-ionic emulsifier and anionic emulsifier at a weight ratio of about 50/50 to about 85/15.
186. (previously presented) The composition of claim 178 wherein said combination is a blend of non-ionic emulsifier and anionic emulsifier at a weight ratio of about 50/50 to about 85/15.

187. (previously presented) The composition of claim 178 wherein said combination is a blend of non-ionic emulsifier and anionic emulsifier at a weight ratio of about 50/50 to about 85/15.

188. (previously presented) The composition of claim 182 wherein said combination is a blend of non-ionic emulsifier and anionic emulsifier at a weight ratio of about 50/50 to about 85/15.

189. (previously presented) The composition of claim 174 wherein said alkane sulfates, alkane sulfonates, and phosphate esters have from about 8 to about 12 carbon atoms.

190. (previously presented) The composition of claim 176 wherein said alkane sulfates, alkane sulfonates, and phosphate esters have from about 8 to about 12 carbon atoms.

191. (previously presented) The composition of claim 177 wherein said alkane sulfates, alkane sulfonates, and phosphate esters have from about 8 to about 12 carbon atoms.

192. (previously presented) The composition of claim 179 wherein said alkane sulfates, alkane sulfonates, and phosphate esters have from about 8 to about 12 carbon atoms.

193. (previously presented) The composition of claim 183 with about 10 wt.% or less of said combination of non-ionic emulsifiers with anionic emulsifiers.

194. (canceled)